

NEW ORIENTAL ZYGAENIDAE.

BY DR. KARL JORDAN.

1. *Alophogaster ludius* spec. nov.

♂. Similar to *A. rubribasis* Hamps. (1892) from Assam. Antenna much more strongly pectinate, the longest branches about as long as three segments. Pleurum of abdominal segment VII with a flattened apical process, which is about three times as long as broad. On anal tergite a dorsal median spiniform subapical hook which is continued proximad by a carina, this hook farther away from apex than in *A. rubribasis*, at each side of the cariniform continuation of the hook a sharp carina extending farther basad and ending distally in a hook similar to, but smaller than, the subapical hook. Clasper ventrally much less dilated than in *A. rubribasis*, almost symmetrical in lateral aspect, recalling a slender-necked wine-bottle. Colour nearly as in *A. rubribasis*; breast, coxae, femora, and hindtibia almost entirely golden yellow like underside of abdomen. Wings much denuded, base of forewing orange; some orange colouring also on hindwing at base and before abdominal margin. Underside evidently more extended golden yellow than black, the golden tint visible from base to beyond cell on forewing and to termen on hindwing in spite of the bad state of preservation of the specimen.

♀. Like *A. rubribasis* ♀. Scaling of antenna entirely black, the apex not being greyish white. Legs somewhat more extended orange. Blue-black terminal patch of forewing broader at costal margin, the orange colour not extending so far distad at costal margin as in *A. rubribasis* ♀, extreme terminal edge orange from tornus to R³, longer scales of fringe grey; as in ♂ the two median veins closer together than the upper median M¹ and lower radial R¹. Hindwing more extended orange than black from abdominal margin to upper submedian SM¹.

Hab. Tonkin: Mauson Mts., iv.-v., 2-3,000 ft. (H. Fruhstorfer), one pair, type ♂.

2. *Aphantocephala solitaria* Jord. 1907.

Described from a single ♂ from N. Georgia, Solomons. We have now a long series of both sexes from Feni I., New Ireland, and Manus, Admiralty Is. In all specimens inclusive of type the hindwing has some white scaling below the cell, which escaped my notice when writing the original description.

3. *Aphantocephala vicina* spec. nov.

♂. Like *A. moluccarum* Feld. (1861); branches of antenna shorter, underside of abdomen dark clayish grey with a blackish blue tint; wings less dull brown, more bluish black-brown (much rubbed in the unique specimen). Lateral horn of abdominal tergite VIII narrower than in *A. moluccarum*. On both fore- and hindwing M¹ midway between R¹ and M².

Length of forewing : ♂ 10 mm.

Hab. Oetakwa R. district, Snow Mts., Dutch New Guinea, up to 3,500 ft., x-xii. 1910 (A. S. Meek); 1 ♂.

4. *Aphantocephala collaris* spec. nov.

♀. Likewise close to *A. moluccarum*. Collar inclusive of base of pronotum, and sides of abdomen orange-yellow, underside of abdomen transversely banded with the same colour; scaling of legs and frons purplish blue; upperside of antenna, thorax, and abdomen blue-black. Wings semi-transparent, bluish black, greenish in certain lights; M^1 of forewing farther from lower cell-angle than from M^2 , as in *A. moluccarum*.

Length of forewing : ♀ 10.5 mm.

Hab. New Hanover, iii. 1923 (A. S. Meek's expedition); 1 ♀.

5. *Homophylotis aenea* spec. nov.

♂♀. Upperside of head, antenna, thorax, and forewing dark purple-blue, slightly glossy; abdomen above greenish blue, glossy. Hindwing black-brown, opaque, with a purple sheen; fringe greyish brown on forewing, white on hindwing. Antenna with white subapical spot. Underside of body, the palpus and legs white, tarsi more or less brown, base and apex of first segment and apices of the others more or less extended white. Wings, below, smoke-grey; hindwing washed with white, particularly in and before cell and along termen.

♂. Abdominal sternite VIII nearly as in *H. chalcosoma*, the median projection longer; inner process of clasper large, broad, turned straight cephalad.

Hab. Feni I., east of New Ireland, v-vi. 1924 (A. F. Eichhorn); 1 ♂, 3 ♀♀.

In neuration the new species here described agrees with *H. albicilia*, all the veins arising from the cell in forewing and R^3 and M^1 of hindwing being stalked.

6. *Hemiscia meeki* vigens subsp. nov.

♂. Larger than the ♂♂ we have from Woodlark and New Guinea. Palpi, lower portion of frons, and anterior surface of procoxae orange like posterior margin of head. Forewing, above: veins in basal area metallic green like thorax, in outer two-thirds purple; dirty white band narrow, of nearly even width, 2 mm. wide in cell, subacuminate behind. Hindwing metallic blue from abdominal margin to cell, dirty white spot smaller than in the other subspecies.

On underside both wings with a white subapical spot; the white streak below cell of hindwing vestigial.

Length of forewing : 22 mm.

Hab. New Hanover, iv. 1923 (A. S. Meek's expedition); 1 ♂.

HADRIONELLA gen. nov.

♂♀. Body more robust than in *Caprima* Walk. (1864). Frons oblong, strongly convex below the antennae. Branches of antenna longer than in *Caprima*. Forewing with 5 subcostals. Ventral margin of clasper of ♂ strongly chitinised, rod-like, sharply pointed, and curved in a semicircle towards the clasper of the other side.

Genotype: *H. spectabilis* Roths. (1899) (as *Caprima*).

7. *Hadrionella spectabilis chara* subsp. nov.

♂. Forewing above with a subbasal triangular orange spot, the apex of which is directed basad; discal band shorter than in *H. spect. spectabilis* and deeper orange, as is also the hindwing. Abdominal margin black only at extreme edge, the terminal band much less extended basad than in *H. s. spectabilis*. On underside the orange markings of forewing larger than above.

♀. Forewing without basal spot; discal band narrowing towards tornus. Marginal band of hindwing narrower at anal angle than in *H. s. spectabilis* ♀.

Hab. British New Guinea: Kumusi R., low elevation, vi. 1907 (A. S. Meek); one pair.

8. *Hadrionella ludia* spec. nov.

In colouring similar to several species of *Caprima*, but the structure places it here.

♂. Body black, glossy metallic blue in parts, collar, a small spot anteriorly on each side of frons, and the inside of forecoxae orange yellow, underside of tibiae and tarsi and a row of diffuse spots on venter more or less yellowish white; tip of abdomen white.

Upperside: forewing purplish black, blue at base, from near base to near middle orange, except extreme costal edge, this area not reaching to base of M^2 , its outer margin straight, oblique; in outer half a very large orange patch shaded with cinnamon-rufous and, therefore, appearing reddish, the black colouring surrounding this patch 1.5 mm. broad between patch and orange area, narrower at costal and distal margins. Hindwing for the greater part orange, base abdominal margin and termen black, the width of the black borders being at apex of wing 5 mm., before anal angle 0.5 mm., at abdominal margin 1.5 mm., and at base 2.0 mm.

On underside the orange more extended and paler than above; the outer patch of the forewing also orange, darker than the proximal area, from which it is separated by a narrow black band; from this band a thin black line below M^2 runs to termen. On hindwing the black colour at abdominal margin and at termen forward to M^2 almost restricted to the fringe.

♀. Larger than ♂, the orange of fore- and hindwing above replaced by chrome-yellow, the straight oblique black median band of forewing with a blue sheen. On underside the distal patch of forewing orange, contrasting with the yellow of fore and hindwing.

Length of forewing: ♂ 14.5 mm., ♀ 18–21 mm.

Hab. New Ireland, xi. 1923 to ii. 1924 (A. F. Eichhorn); 1 ♂ (type) and a series of ♀♀.

In a second, somewhat crippled, ♂ the proximal areas are smaller than in type and on upperside as pale yellow as in ♀, the tip of the abdomen, moreover, being more extended white.

CAPRIMA Walk. 1864.

Forewing with 4 subcostals, SC^1 being lost.

Genotype: *C. gelida* Walk. (1864).

9. *Caprima necopina* spec. nov.

♂. Blue-black; frons and apex of abdomen white; collar and a large ante-median patch on forewing continued across hindwing to SM^2 chrome-yellow. On

forewing the yellow patch irregularly rounded distally, separated by a black band of about 2 mm. width from a large rufous-red area, which is slightly indented at the veins, the black margins rather less than 1 mm. broad, the outer margins of the black transverse band cross cell at base of M^2 ; fringe black. Outer margin of yellow patch of hindwing rounded behind, crossing cell at base of M^1 , black abdominal margin about 1.3 mm. broad, fringe black.

Underside like upper, but hindwing with a small reddish subapical patch. In colouring similar to *C. albifrons* Roths. (1897), apart from the yellow collar, but the structure of the tail-end very different: eighth tergite normal, not cleft as in *C. albifrons*; on inner side of clasper a strong process directed straight cephalad, the two processes of the right and left claspers very far apart; in front of this process, i.e. more inside and nearer head, a very slender process directed distad; penis below these processes, somewhat curved downward.

Length of forewing: 12.5 mm.

Hab. New Hanover, ii-iii. 1923 (A. S. Meek's expedition); 1 ♂.

10. *Caprima albifrons* Roths. 1897.

A large series of both sexes from New Hanover and New Ireland prove this species to be very variable. The cadmium yellow colour of the hindwing and proximal area of forewing is frequently replaced by deep orange; the size of these areas as well as of the reddish discal patch of forewing inconstant, sometimes the hindwing nearly all black above. Crown of head white like frons; mesonotum with a small yellow spot near costa of forewing. The apex of the abdomen is either brownish black or white; this conspicuous difference deserves registration: *C. albifrons* f. *leucura* nov., white-tipped specimens.

The specimens from New Ireland do not vary so much in the wing-markings as those from New Hanover, the typical locality, but also on New Ireland both f. *leucura* and f. *albifrons* were obtained together as in New Hanover.

11. *Caprima plagiata casta* subsp. nov.

♀. White area of both wings larger than in other subspecies of *C. plagiata* Jord. (1912), that of hindwing extending to fringe before anal angle.

Hab. Hydrographer Mts., British New Guinea, 2,500 ft., ii. 1918 (Eichhorn Bros.); 2 ♀♀.

12. *Caprima cleora* spec. nov.

♀. Body metallic blue; frons white, collar *not* white, no lateral spot on mesonotum. Branches of antenna longer than in *C. plagiata*. Reddish discal patch of forewing divided by black vein-streaks as in *C. plagiata*; fringe entirely white; white are angulate below cell, here reaching (or nearly) to base of M^2 , 3 mm. broad at hindmargin of wing, continuous with the white area of hindwing, which area is as broad in middle of cell as before hindmargin, the latter black, about 1 mm. broad.

On underside the white areas broader than above, the reddish patch of forewing anguliform as in *C. plagiata*.

Length of forewing: ♀ 12 mm.

Hab. Rawlinson Mts., inland from Huon Gulf, E. New Guinea (Keysser); 1 ♀.

13. *Caprima selenis* spec. nov.

♀. Near *C. aurantiaca* Roths. (1899). Body black, with a purple and blue sheen, bluer beneath than above, frons blue, legs clayish brown. Markings of wings chrome-yellow; on forewing an oblong antemedian spot from hindmargin into cell, not quite 2 to 2.5 mm. broad, subacuminate in cell, at right angle to hindmargin, extending across it on to hindwing, or separated from hindwing by the margin being black; discal spot slightly tinged with orange, elongate, curved, about 1.5 mm. broad and 5 to 5.7 mm. long, pointed behind. Patch of hindwing about 5 mm. long and 3 mm. broad, oblique, its basi-abdominal margin slightly rounded, its apici-costal margin incurved, and the terminal margin almost straight; width of black border at costal margin about 5 mm., from below R¹ and along abdominal margin 1 to 1.5 mm., slightly varying individually.

On underside the yellow patches very little larger than above.

Length of forewing: ♀ 12-13 mm.

Hab. Eastern New Guinea; two subspecies.

(a) *C. s. selenis*.

♀. Antemedian patch of forewing above 2 mm. broad, not separated from yellow patch of hindwing.

Hab. Hydrographer Mts., N.E. British New Guinea, i, iii, 1918 (Eichhorn Bros.); 3 ♀♀.

(b) *C. s. huonis* subsp. nov.

♀. Antemedian patch of forewing 2.5 mm. broad, separated from patch of hindwing by the narrowly black margin of forewing, discal spot less curved than in *C. s. selenis*.

Hab. Rawlinson Mts., inland from Huon Gulf, E. New Guinea (Keysser); 1 ♀.

CYANIDIA gen. nov.

♀. Near *Caprima* Walk. (1864); frons narrower and branches of distal segments of antenna longer. Forewing with only 3 subcostal, SC² and SC³ being missing.

Genotype: *C. thaumasta* Jord. (1907) (as *Caprima*).

14. *Cyanidia thaumasta valida* subsp. nov.

♀. Larger than *th. thaumasta* Jord. (1907), from Korrido, the white subapical spot of forewing elongate-ovate, narrowing behind, nearly 3 mm. broad and 6 mm. long; the metallic blue borders of this spot narrower: outer one vestigial, inner one interrupted in middle of discocellulars. On hindwing the blue submarginal band narrower, cell with blue streak.

Length of forewing: ♀ 17 mm. (*C. th. thaumasta* 13 mm.).

Hab. Oetakwa R. district, Snow Mts., Dutch N. Guinea, up to 3,000 ft., x-xi, 1910 (A. S. Meek); 1 ♀.

15. *Heteropan scintillans caesius* subsp. nov.

♂♀. More distinctly blue than *H. sc. scintillans* Walk. (1854), termen of forewing blue, the proximal border of the glossy metallic blue terminal line dark purple, not brass-colour; terminal margin not distinctly incurved below apex.

Underside of both wings without a whitish streak in ♂ and ♀; scent-fold of hindwing of ♂ present as in *H. sc. scintillans*.

Hab. Nicobar Islands: Central Group, ii-viii.1904 (G. Rogers); a series.

16. *Heteropan lycaenoides lepidus* subsp. nov.

♂♀. Brighter blue than *H. l. lycaenoides* Walk. (1864), less shaded with purple, particularly the terminal area; white patch of forewing, above, smaller, not extending to base, and the hindmargin washed with blue, terminal line deep blue or purple, narrow, more or less sharply defined, separated from fringe by a glossy metallic line, fringe also glossy. Hindwing blue, the whitish streak of underside faintly shining through. On underside the white patch of forewing somewhat larger than above, extending to hindmargin, at least in ♀. Hindwing of both sexes with whitish median streak shaded with blue.

Hab. British New Guinea: Hydrographer Mts., iv.1918 (Eichhorn), type; Angabunga R., affluent of St. Joseph R., 6,000 ft. and upwards, xi.1904-ii.1905 (A. S. Meek); Upper Aroa R., ii.1903 (A. S. Meek); 3 ♂♂, 5♀♀.

17. *Heteropan lycaenoides apinus* subsp. nov.

♂. Forewing without white area on the upperside, being dull brownish blue nearly as in *H. anisus* Jord. (1908); at termen two glossy metallic blue lines, separated by a line which changes according to light from nearly black to copper colour, fringe similar to this line. Hindwing blue, purple at termen.

On underside the white areas on both wings as in *H. l. lepidus*, but better defined and on forewing smaller, the hindmargin of forewing blue.

Hab. New Ireland, i.1924 (A. F. Eichhorn); 1 ♂.

Easily distinguished from *H. anisus* ♂ by the hindwing beneath bearing a blue basal spot, and from *H. cyaneus* Jord. (1908) by the forewing having five subcostals.

18. *Eusphalera pernitens* spec. nov.

♂. Pro- and mesonotum dull greenish black with very few metallic scales; hindmargin of head red; rest of body, the upperside of hindwing, and the underside of both wings metallic green, very glossy on the wings. Forewing, dull greenish black on upper side, narrow, not quite thrice as long as broad. Hindwing: a white spot obliquely across apex of cell, about 5 mm. long and at the widest point 3 broad, its proximal margin nearly straight, crossing cell half-way between M¹ and M², its outer margin in front of M¹ not quite 3 mm. from termen; outside this spot some green scaling, otherwise the whole termen black.

Underside: on forewing an oblique band across cell from near costal margin to near tornus black, veins within this band more or less green, on proximal side of band and contiguous with it a narrow creamy-white line, interrupted at M, tapering behind, reaching from C to SM¹ and being a short distance proximal of base of M², apex of wing black, this colouring running along termen to near tornus. Creamy-white spot of hindwing longer than above; reaching from C to M², below it a small black spot, fringe and apical margin black.

Outer clasper (VIII. st.) very long, strongly curved inward-frontad, with a row of strong triangular teeth on the inside of the proximal portion and several such teeth also on the outside of the apical portion.

♀. Similar to ♂; forewing somewhat narrower, white line on underside of forewing somewhat broader.

Length of forewing: ♂ 21 mm., ♀ 18 mm.

Hab. New Guinea: Rawlinson Mts., inland from Huon Gulf (Keysser); one pair.

19. *Eusphalera multicolor* spec. nov.

An amazingly variable species, the various forms being so different in colouring that they have the appearance of representing a dozen species. The forewing is marked with orange, or yellow, or white and blue, or white and orange and blue, or only with blue. The species agrees in the genitalia with *E. semiflava* Jord. (1904) from New Guinea, but differs in the branches of the antenna being longer, which is particularly noticeable in the ♂♂.

♂. Abdomen pale yellow beneath as in *E. semiflava*. According to colour we distinguish 9 principal forms, each represented in the collection by several specimens:

(a) Upperside: forewing with large orange area from near base to M^2 or not quite so far, almost as in *E. semiflava*, but not extending so far distad, a metallic blue subapical spot absent or present; on hindwing an orange or yellow median band from anterior margin of cell to tornus, the fringe of tornus remaining black, outer margin of band crossing cell at or near base of M^1 . Underside nearly as above, but the orange or yellow colouring paler, a subapical spot or short band on forewing (often absent) and a submarginal band on hindwing (sometimes reduced to a subapical spot) metallic blue.—f. *aurantia*.

(b) As before, but the orange colour replaced by yellow.—f. *flava*.

(c) Upperside: black base of forewing so extended that the orange area is reduced to an oblique band which is widest at costa, being here about as broad as the black basal area; on hindwing the band orange, shifted distad, its inner margin crossing cell at M^2 , the black termen about half as broad as in form (a). Underside: orange replaced by orange-yellow.—f. *fasciata*.

(d) Like (c), but the band of the forewing more oblique and that of the hindwing obsolescent, more or less shaded with black above and beneath and reduced to two or three partitions; blue markings of underside strongly developed.—f. *reducta*.

(e) Forewing with the orange band antemedian or even subbasal, distant from M^2 ; hindwing without trace of yellow or orange above and beneath. On underside band of forewing broader than above, orange-yellow; blue submarginal band of hindwing strongly developed.—f. *simplex*.

(f) Upperside: forewing with a white median band reaching neither costa nor tornus, more or less shaded with orange and strongly margined with metallic blue, short subapical blue band conspicuous; on hindwing an orange patch as in form (d). On underside the band of forewing not shaded with orange; metallic blue scaling strongly developed. Type of species.—f. *multicolor*.

(g) Like form (f), but the orange spot of hindwing absent.—f. *albifascia*.

(h) Like form (f), but the white band of forewing entirely replaced by a metallic blue one, at least on upperside; on underside the white band usually indicated. Hindwing with an orange spot as in form (f). On underside blue scaling strongly developed.—f. *tricolor*.

(i) Like (h), blue median and subapical band, usually very conspicuous,

sometimes much reduced ; hindwing without orange spot or at most with a slight trace of it.—f. *coerulea*.

In the specimens with much metallic scaling the abdomen also is often metallic on the upperside.

♀. Abdomen unicolorous, not yellow beneath.

(a) Corresponding to f. *aurantia* of ♂, the orange area of forewing above sometimes larger, in one specimen extending to lower angle of cell.—f. *aurantia* ; only two specimens of this form.

(b) Orange area of forewing above replaced by yellow slightly tinged with orange.—f. *flava* ; a series.

(c) Orange area invaded from inner margin of wing by a large black patch which sometimes reaches across cell, dividing the area into a variable basal spot and a median band ; on hindwing the orange band shifted distad as in ♂ f. *fasciata*, often the whole cell being black ; terminal black band usually reduced to a mere line from middle to anal angle. Evidently the commonest form of the ♀.—f. *fasciata* ; a series.

(d) Orange area of forewing above almost intact, the invasion by black being bounded by SM² ; hindwing without orange.—♀.—f. *seminigra* ; three specimens.

(e) Body and basal area of hindwing above and below metallic blue. Orange basal area of forewing above more reddish, less extending distad, not reaching to M² ; hindwing without orange or yellow.—♀.—f. *chalcosoma* ; one specimen.

(f) The Chinese-orange area reduced from base so as to form an antemedian band as in f. *simplex* of ♂ ; body and bases of wings metallic blue.—f. *simplex* ; one specimen.

(g) Upperside : on forewing an orange subbasal patch, a white median band edged with metallic blue and a short conspicuous subapical metallic band ; on hindwing a large band-like area placed as in ♀ f. *fasciata* ; body metallic blue. Underside : orange band of hindwing narrower than above.—f. *multicolor* ; one specimen.

(h) Like ♀ f. *multicolor* ; but hindwing without orange, its basal area blue above and beneath.—f. *albifascia* ; one specimen.

SC³ of forewing often absent in both sexes, irrespective of colouring of wings, sometimes present on one wing only.

Hab. New Ireland, ix.1923—iii.1924 (A. F. Eichhorn) ; a long series.

20. *Agalope simplex* spec. nov.

♂. Similar to *A. hemileuca* Roths. (1904) from Owgarra, south side of the Owen Stanley range, New Guinea. Forewing more elongate, without a median band, the whitish colouring of the proximal half gradually shading into the blackish colouring of the distal half ; terminal margin distinctly incurved, the apex being produced, termen of hindwing less rounded than in *Ch. hemileuca*. Clasper broader, particularly at apex, its ventral margin not incurved.

Length of forewing : 29 mm.

Hab. Rawlinson Mts., inland from Huon Gulf, New Guinea (Keysser) ; 1 ♂.